

Publications List

October-March 2001

A

Adams, J. J., Ebbers, C. A., Schaffers, K. I., and Payne, S. A., *Nonlinear Optical Properties of LaCa₄O(BO₃)₃*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139794; also in *Opt. Lett.* **26**(4), 217–219 (2001).

Amendt, P., Shestakov, A. I., Landen, O., Pollaine, S., Bradley, D. K., and Suter, L., *Implosion Target Surrogacy Studies on OMEGA for the National Ignition Facility: Backlit Thinshells*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-140743.

Submitted to *Phys. of Plasmas*.

Auerbach, J. M., Wegner, P. J., Couture, S. A., Eimerl, D., Hibbard, R. L., Milam, D., Norton, M. A., Whitman, P. K., and Hackel, L. A., *Modeling of Frequency Doubling and Tripling with Measured Crystal Spatial Refractive-Index Nonuniformities*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139333; also in *Appl. Opt.* **40**(9), 1404–1411 (2001).

B

Back, C. A., Davis, J. L., Grun, J., Landen, O. L., Suter, L. J., Slark, G., and Oades, K., *Multi-Kilovolt X-Ray Conversion Efficiency*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142018 ABS. Prepared for *Society of Photo-Optical Instrumentation Engineers Conf*, San Diego, CA, Jul 29–Aug 3, 2001.

Back, C. A., Golovkin, I., Mancini, R., Missalla, T., Landen, O. L., Lee, R. W., and Klein, L., *Diagnosing Plasma Gradients Using Spectral Line Shapes*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139309. Prepared for *15th Intl Conf on Spectral Line Shapes*, Berlin, Germany, Jul 10–14, 2000.

Back, C. A., Suter, L. J., Davis, J., Grun, J., Decker, C. D., Landen, O. L., Hsing, W., Miller, M., and Wuest, C., *Multi-keV X-Ray Emission Produced by Supersonic Laser Heating*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-140630 ABS.

Prepared for *9th Intl Workshop on Radiative Properties of Hot Dense Matter*, Santa Barbara, CA, Oct 30–Nov 3, 2000.

Barton, I. M., Britten, J. A., Dixit, S. N., Summers, L. J., Thomas, I. M., Rushford, M. C., Lu, K., Hyde, R. A., and Perry, M. D., *Fabrication of Large-Aperture Lightweight Diffractive Lenses for Use in Space*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137928; also in *Appl. Opt.* **40**(4), 447–451 (2001).

Bell, P., Lee, D., Wooton, A., Mascio, B., Kimbrough, J., Sewall, N., Hibbard, W., Dohoney, P., Landon, M., Christianson, G., and Celeste, J., *Target Area and Diagnostic Interface Issues on the National Ignition Facility*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-138387; also in *Rev. Sci. Inst.* **72**(1Pt2), 492–498 (2001).

Bennett, G. R., Landen, O. L., Adams, R. F., Porter, J. L., Ruggles, L. E., Simpson, W. W., and Wakefield, C., “X-Ray Imaging Techniques on Z Using the Beamlet Laser,” *Rev. Sci. Inst.* **72**(1Pt2), 657–662 (2001).

Berger, R. L., Divol, L. M., Geddes, C., Glenzer, S., and Kirkwood, R., *Do the Nonlinear Theories Really Explain the Saturation of SRS and SBS Observed in Experiments?* Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142067 ABS.
Prepared for *4th Intl Workshop on Laser–Plasma Interaction Physics*, Banff, Alberta, Canada, Feb 21–24, 2001.

Berggren, R. R., Caldwell, S. E., Faulkner Jr., J. R., Lerche, R. A., Mack, J. M., Moy, K. J., Oertel, J. A., and Young, C. S., “Gamma-Ray-Based Fusion Burn Measurements,” *Rev. Sci. Inst.* **72**(1Pt2), 873–876 (2001).

Bourgade, J. L., Villette, B., Bocher, J. L., Boutin, J. Y., Chivhe, S., Dague, N., Gontier, D., Jaduad, J. P., Savale, B., Wrobel, R., and Turner, R. E., “DMX: An Absolutely Calibrated Time-Resolved Broadband Soft X-Ray Spectrometer Designed for MJ Class Laser-Produced Plasmas,” *Rev. Sci. Inst.* **72**(1Pt2), 1173–1182 (2001).

Bradley, D. K., Bell, P. M., Dymoke-Bradshaw, A. K. L., Hares, J. D., Bahr, R. E., Smalyuk, V. A., Hargrove, D. R., and Piston, K., *Development and Characterization of a*

Single-Line-Of-Sight Framing Camera, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-138002; also in *Rev. Sci. Inst.* **72**(1Pt2), 694–697 (2001).

Bradley, D. K., Collins, G. W., Celliers, P., Hicks, D., Da Silva, L. B., Mackinnon, A., Cauble, R., Moon, S. J., Wallace, R., Hammel, B., Hsing, W., Koenig, M., Benuzzi, A., Huser, G., Henry, E., Batani, D., Willi, O., Pasley, J., Henning, G., Loubeyre, P., Jeanloz, R., Lee, K. M., Benedetti, L. R., Neely, D., Notley, M., and Danson, C., *Equation of State Measurements in Singly Shocked Diamond*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142143 ABS. Prepared for *12th American Physical Society Topical Conf on Shock Compression of Condensed Matter*, Atlanta, GA, Jun 24–29, 2001.

Branham, K. E., Byrd, H., Cook, R., Mays, J. W., and Gary, G. M., *Preparation of Soluble, Linear Titanium-Containing Copolymers, by the Free Radical Copolymerization of Vinyl Titanate Monomers with Styrene*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-134776; also in *J. Appl. Polymer Sci.* **78**(1), 190–199 (2000).

Bullock, A. B., Landen, O. L., and Bradley, D. K., *10 and 5 μm Pinhole-Assisted Point-Projection Backlit Imaging for the National Ignition Facility*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137904; also in *Rev. Sci. Inst.* **72**(1Pt2), 690–693 (2001).

Bullock, A. B., Landen, O. L., and Bradley, D. K., *Relative X-Ray Backlighter Intensity Comparison of Ti and Ti/Sc Combination Foils Driven in Double-Sided and Single-Sided Laser Configuration*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139282; also in *Rev. Sci. Inst.* **72**(1Pt2), 686–689 (2001).

C

Cauble, R., Bradley, D. K., Celliers, P. M., Collins, G. W., Da Silva, L. B., and Moon, S. J., “Experiments Using Laser-Driven Shockwaves for EOS and Transport Measurements,” *Contrib. Plasma Phys.* **41**(2-3), 239–242 (2001).

Celliers, P. M., Collins, G. W., Hicks, D., Da Silva, L. B., Mackinnon, A., Cauble, R., Moon, S. J., Wallace, R. J., Hammel, B. A., Koenig, M., Benuzzi, A., Huser, G., Henry, E.,

Batani, D., Loubeyre, P., Willi, O., Pasley, J., Gessner, H., Jeanloz, R., Lee, K. M., Benedetti, L. R., Neely, D., Notley, M., and Danson, C., *Reflected Shock States in Water*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142250 ABS. Prepared for *12th American Physical Society Topical Conf on Shock Compression of Condensed Matter*, Atlanta, GA, Jun 24–29, 2001.

Cohen, B. I., Baldis, H. A., Berger, R. L., Estabrook, K. G., Williams, E. A., and Labaune, C., *Modeling of the Competition of Stimulated Raman and Brillouin Scatter in Multiple Beam Experiments*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-134924; also in *Phys. Plasmas* **8**(2), 571–591 (2001).

Collins, G. W., Celliers, P. M., Hicks, D., Da Silva, L. B., Mackinnon, A., Cauble, R., Moon, S. J., Wallace, R., Hammel, B., Hsing, W., Koenig, M., Benuzzi, A., Huser, G., Henry, E., Batani, D., Willi, O., Pasley, J., Henning, G., Loubeyre, P., Jeanloz, R., Lee, K. M., Benedetti, L. R., Neely, D., Notley, M., and Danson, C., *Optical Properties of Simple Shock Compressed Fluids*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142028 ABS. Prepared for *American Physical Society Topical Conf*, Atlanta, GA, Jun 25–29, 2001.

Cowan, T. E., Roth, M., Johnson, J., Brown, C., Christl, M., Fountain, W., Hatchett, S., Henry, E. A., Hunt, A. W., Key, M. H., MacKinnon, A., Parnell, T., Pennington, D. M., Perry, M. D., Phillips, T. W., Sangster, T. C., Singh, M., Snavely, R., Stoyer, M., Takahashi, Y., Wilks, S. C., and Yasuike, K., “Intense Electron and Proton Beams from Petawatt Laser–Matter Interactions,” *Nucl. Instrum. Meth. ods* **455A**(1), 130–139 (2000).

D

Dattolo, E., Suter, L., Monteil, M.-C., Jadaud, J.-P., Dague, N., Glenzer, S., Turner, R., Juraszek, D., Lasinski, B., Decker, C., Landen, O., and MacGowan, B., *Status of Our Understanding and Modeling of X-Ray Coupling Efficiency in Laser Heated Hohlraums*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137622; also in *Phys. Plasmas* **8**(1), 260–265 (2001).

Delage, O., Dague, N., Le, T., Lerche, R. A., Sangster, T. C., Izumi, N., Jaanimagi, P. A., and Fisher, R. K., *High Spatial Resolution Imaging System for High Energy Neutrons in Inertial Confinement Fusion Experiments*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142031 ABS. Prepared for *Intl Symp on Optical Science and Technology*, San Diego, CA, Jul 29–Aug 3, 2001.

Delage, O., Lerche, R. A., Sangster, T. C., and Arsenault, H. H., *SIRINC: A Code for Assessing and Optimizing the Neutron Imaging Diagnostic Capabilities in Inertial Confinement Fusion Experiments*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137922 ABS; also in *Rev. Sci. Inst.* **76**(1PT2), 869–872 (2001).

Demos, S. G., Kozlowski, M. R., Staggs, M., Chase, L. L., Burnham, A., and Radousky, H. B., *Mechanisms to Explain Damage Growth in Optical Materials*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139771. Prepared for *Annual Symp on Optical Materials for High Power Lasers*, Boulder, CO, Oct 15–18, 2000.

Depierreux, S., Labaune, C., Fuchs, J., and Baldis, H. A., “Application of Thomson Scattering to Identify Ion Acoustic Waves Stimulated by the Langmuir Decay Instability,” *Rev. Sci. Inst.* **71**(9), 3391–3401 (2000).

F

Feldman, J. L., Eggert, J. H., Mao, H. K., and Hemley, R. J., “Computations of Vibron Excitations and Raman Spectra of Solid Hydrogen,” *J. Low Temp. Phys.* **122**(3/4), 389–399 (2001).

Fourkal, E., Bychenkov, V. Y., Rozmus, W., Sydora, R., Kirkby, C., Capjack, C. E., Glenzer, S. H., and Baldis, H. A., *Electron Distribution Function in Laser Heated Plasmas*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139494; also in *Phys. Plasmas* **8**(2), 550–556 (2001).

Frenje, J. A., Green, K. M., Hicks, D. G., Li, C. K., Seguin, F. H., Petrasso, R. D., Sangster, T. C., Phillips, T. W., Glebov, V. Y., Meyerhofer, D. D., Roberts, S., Soures, J. M., Stoeckl, C., Fletcher, K., Paladino, S., and Leeper, R. J., “A Neutron Spectrometer for

Precise Measurements of DT Neutrons from 10 to 18 MeV at OMEGA and the National Ignition Facility," *Rev. Sci. Inst.* **72**(1Pt2), 854–858 (2001).

Fuchs, J., Labaune, C., Depierreux, S., Baldis, H. A., Michard, A., and James, G., *Experimental Evidence of Plasma-Induced Incoherence of an Intense Laser Beam Propagating in an Underdense Plasma*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139495; also in *Phys. Rev. Lett.* **86**(3), 432–435 (2001).

Fuchs, J., Labaune, C., Depierreux, S., Tikhonchuk, V. T., and Baldis, H. A., *Stimulated Brillouin and Raman Scattering from a Randomized Laser Beam in Large Inhomogeneous Plasmas. Experiment*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139507-PT-1; also in *Phys. Plasmas* **7**(11), 4659–4668 (2000).

G

Garces, N. Y., Stevens, K. T., Halliburton, L. E., Demos, S. G., Radousky, H. B., and Zaitseva, N. P., *Identification of Electron and Hole Traps in KH₂PO₄ Crystals*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139770; also in *J. Appl. Phys.* **89**(1), 47–52 (2001).

Glenzer, S. H., Divol, L. M., Berger, R. L., Geddes, C., Kirkwood, R. K., Moody, J. D., Williams, E. A., and Young, P. E., *Thomson Scattering Measurements of Saturated Ion Waves in Laser Fusion Plasmas*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-140588; also in *Phys. Rev. Lett.* **86**(12), 2565–2568 (2001).

Glenzer, S. H., Fournier, K. B., Wilson, B. G., Lee, R. W., and Suter, L. J., *Ionization Balance in Inertial Confinement Fusion Hohlraums*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139505. Submitted to *Phys. Rev. Lett.*

Glenzer, S. H., Fournier, K. B., Wilson, B. G., Lee, R. W., Suter, L. J., and Young, P. E., *Ionization Balance in Inertial Confinement Fusion Hohlraum Plasmas*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-141095 ABS. Prepared for *9th Intl Workshop on Radiative Properties of Hot Dense Matter*, Santa Barbara, CA, Oct 30–Nov 3, 2000.

Glenzer, S. H., *Thomson Scattering in Inertial Confinement Fusion Research*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-135822; also in *Contrib. Plasma Phys.* **40**(1-2), 36–45 (2000).

Glenzer, S., Jones, O., Speck, D. R., Munro, D., Lerche, R., Salmon, T., Bliss, E., Gates, A., Boyd, B., Auerbach, J., Williams, W., Saroyan, A., Kalantar, D., MacGowan, B., Zacharias, R., Hayman, C., and Sacks, R., *3ω Power Balance Procedure on the NIF*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-ID-142777.

Glinsky, M. E., Bailey, D. S., London, R. A., Amendt, P. A., Rubenchik, A. M., and Strauss, M., *An Extended Rayleigh Model of Bubble Evolution*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-130969 Rev 2; also in *Phys. Fluids* **13**(1), 20–31 (2001).

Gulec, K., Abdou, M., Moir, R. W., Morley, N. B., and Ying, A., “Novel Liquid Blanket Configurations and Their Hydrodynamic Analyses for Innovative Confinement Concepts,” *Fus. Engr. Design* **49**, 567–576 (2000).

H

Heeter, R. F., Bailey, J. E., Cuneo, M. E., Emig, J., Foord, M. E., Springer, P. T., and Thoe, R. S., *Plasma Diagnostics for X-Ray Driven Foils at Z*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-138708; also in *Rev. Sci. Inst.* **72**(1Pt2), 1224–1227 (2001).

Hibbard, W. J., Landon, M. D., Vergino, M. D., Lee, F. D., and Chael, J. A., *Design of the National Ignition Facility Diagnostic Instrument Manipulator*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137910; also in *Rev. Sci. Inst.* **72**(1Pt2), 530–532 (2001).

Hicks, D. G., Celliers, P. M., Collins, G. W., Da Silva, L. B., Mackinnon, A., Cauble, R., Moon, S. J., Wallace, R. J., Hammel, B. A., Koenig, M., Benuzzi, A., Huser, G., Henry, E., Batani, D., Loubeyre, P., Willi, O., Pasley, J., Gessner, H., Jeanloz, R., Lee, K. M., Benedetti, L. R., Neely, D., Bitketm N., and Danson, C., *Generating Extreme Densities in Water Using Laser-Driven Shocks in Diamond Anvil Cells*, Lawrence Livermore National

Laboratory, Livermore, CA, UCRL-JC-142027 ABS. Prepared for *American Physical Society Topical Conf*, Atlanta, GA, Jun 25–29, 2001.

Hicks, D. G., Li, C. K., Seguin, F. H., Frenje, J. A., Petrasso, R. D., and Sangster, T. C., “Optimal Foil Shape for Neutron Time-Of-Flight Measurements Using Elastic Recoils,” *Rev. Sci. Inst.* **72**(1Pt2), 859–862 (2001).

Hicks, D. G., Li, C. K., Seguin, F. H., Ram, A. K., Frenje, J. A., Petrasso, R. D., Soures, J. M., Glebov, V. Y., Meyerhofer, D. D., Roberts, S., Sorce, C., Stockl, C., Sangster, T. C., and Phillips, T. W., *Charged-Particle Acceleration and Energy Loss in Laser-Produced Plasmas*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-MI-140997; also in *Phys. Plasmas* **7**(12), 5106–5117 (2000).

Hicks, D. G., Li, C. K., Seguin, F. H., Schnittman, J. D., Ram, A. K., Frenje, J. A., Petrasso, R. D., Soures, J. M., Meyerhofer, D. D., Roberts, S., Sorce, C., Stockl, C., Sangster, T. C., and Phillips, T. W., *Observations of Fast Protons Above 1 MeV Produced in Direct-Drive Laser-Fusion Experiments*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-136746; also in *Phys. Plasmas* **8**(2), 606–610 (2001).

Hinkel, D. E., Langdon, A. B., and Suter, L. J., *Filamentation and Backscatter in High Temperature Hohlraums*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142065 ABS. Prepared for *4th Intl Workshop on Laser–Plasma Interaction Physics*, Banff, Alberta, Canada, Feb 21–24, 2001.

I

Izumi, N., Lerche, R. A., Phillips, T. W., and Sangster, T. C., *Development of Lower Energy Neutron Spectroscopy for Areal Density Measurement in Implosion Experiment at NIF and OMEGA*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142032 ABS. Prepared for *Intl Symp on Optical Science and Technology*, San Diego, CA, Jul 29–Aug 3, 2001.

K

Kalantar, D. H., Bell, P. M., Perry, T. S., Sewall, N., Kimbrough, J., Weber, F., Diamond, C., and Piston, K., *Optimizing Data Recording for the NIF Core Diagnostic X-Ray Streak Camera*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-138107; also in *Rev. Sci. Inst.* **76**(1Pt2), 751–754 (2001).

Kalantar, D., and Meyers, M., *2000 NLUF Program: Dynamic X-Ray Diffraction*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-141396 SUM.

Kauffman, R., *Inertial Confinement Fusion Monthly Highlights*, April 2000, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-TB-128550-00-07.

Kauffman, R., *Inertial Confinement Fusion Monthly Highlights*, May/June 2000, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-TB-128550-00-08-09.

Kauffman, R., *Inertial Confinement Fusion Monthly Highlights*, July/August 2000, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-TB-128550-00-10-11.

Kauffman, R., *Inertial Confinement Fusion Monthly Highlights*, September 2000, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-TB-128550-00-12.

Kauffman, R., *Inertial Confinement Fusion Monthly Highlights*, October 2000, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-TB-128550-01-01.

Kauffman, R., *Inertial Confinement Fusion Monthly Highlights*, November/December 2000, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-TB-128550-01-02/03.

Key, M. H., *Fast Ignition*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-134953 ABS. Prepared for *4th Symp on Current Trends in Intl Fusion Research: A Review*, Washington, D.C., Mar 12–16, 2001.

Key, M. H., *Magnetically Collimated Energy Transport by Laser Generated Relativistic Electrons*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-ID-142488.

Kimbrough, J. R., Bell, P. M., Christianson, G. B., Lee, F. D., Kalantar, D. H., Perry, T. S., Sewall, N. R., and Wooten, A. J., *National Ignition Facility Core X-Ray Streak Camera*,

Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137908; also in *Rev. Sci. Inst.* **72**(1Pt2), 748–750 (2001).

Koch, J. A., Presta, R. W., Sacks, R. A., Zacharias, R. A., Bliss, E. S., Dailey, M. J., Feldman, M., Grey, A. A., Holdener, F. R., Salmon, J. T., Seppala, L. G., Toeppen, J. S., Van Atta, L., Van Wonterghem, B. M., Whistler, W. T., Winters, S. E., and Woods, B. W., *Experimental Comparison of a Shack-Hartmann Sensor and a Phase-Shifting Interferometer for Large-Optics Metrology Applications*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-136743 and 136105; also in *Appl. Opt.* **39**(25), 4540–4546 (2000).

Koch, J. A., Sater, J. D., Mackinnon, A. J., Bernat, T. P., Bittner, D. N., Collins, G. W., Hammel, B. A., and Still, C. H., *Numerical Raytrace Verification of Optical Diagnostics of Ice Surface Roughness for Inertial Confinement Fusion Experiments*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142757. Submitted to *Appl Opt.*

L

Laming, J. M., Back, C. A., Decke r, C. D., Grun, J., Feldman, U., Seely, J. F., and Davis, J. F., *Modeling and Interpretation of Spectra from Kr/Xe Filled Low Z Enclosures*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-141345. Submitted to *Phys. Rev. E*.

Landen, O. L., Farley, D. R., Glendinning, S. G., Logory, L. M., Bell, P. M., Koch, J. A., Lee, F. D., Bradley, D. K., Kalantar, D. H., Back, C. A., and Turner, R. E., *X-Ray Backlighting for the National Ignition Facility*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139367; also in *Rev. Sci. Inst.* **72**(1PT2), 627–634 (2001).

Landen, O. L., Glenzer, S. H., Edwards, M. J., Lee, R. W., and Cauble, R. C., *Dense Matter Characterization by X-Ray Thomson Scattering*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-141055 ABS. Prepared for *9th Intl Workshop on Radiative Properties of Hot Dense Matter*, Santa Barbara, CA, Oct 30–Nov 3, 2000.

Landen, O. L., Glenzer, S. H., Edwards, M. J., Lee, R. W., Collins, G. W., Cauble, R. C., Hsing, W. W., and Hammel, B. A., *Dense Matter Characterization by X-Ray Thomson Scattering*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-141055.

Landen, O. L., Lobban, A., Tutt, T., Bell, P. M., Costa, R., Hargrove, D. R., and Ze, F., *Angular Sensitivity of Gated Microchannel Plate Framing Cameras*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137879; also in *Rev. Sci. Inst.* **72**(1Pt2), 709–712 (2001).

Landon, M. D., Koch, J. A., Alvarez, S. S., Bell, P. M., Lee, F. D., and Moody, J. D., *Design of the National Ignition Facility Static X-Ray Imager*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137911; also in *Rev. Sci. Inst.* **72**(1PT2), 698–700 (2001).

Langdon, A. B., and Lasinski, B. F., *Zohar, Version 2.0* , Lawrence Livermore National Laboratory, Livermore, CA, UCRL-CODE-2001-009.

Langdon, B., Berger, R. L., Cohen, B. I., Hinkel, D. E., Kirkwood, R. K., Still, C. H., Suter, L. J., Williams, E. A., and Young, P. E., *Laser–Plasma Interactions in Overlapping Laser Beams* , Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142068 ABS. Prepared for *4th Intl Workshop on Laser–Plasma Interaction Physics* , Banff, Alberta, Canada, Feb 21–24, 2001.

Logan, B. G., Meier, W. R., Moir, R. W., Abdou, M., Peterson, P. F., Kulcinski, G. L., Tillack, M. S., Latkowski, J. F., Petti, D., Schultz, K. R., and Nobile, A., *Progress and Critical Issues for IFE Blanket and Chamber Research* , Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-134976; also in *Fus. Engr. Design* **51-2**, 1095–1101 (2000).

Loveridge-Smith, A., Allen, A., Belak, J., Boehly, T., Hauer, A., Holian, B., Kalantar, D., Kyrala, G., Lee, R. W., Lomdahl, P., Meyers, M. A., Paisley, D., Polaine S., Remington, B., Swift, D. C., Weber, S., and Wark, J. S., *Anomalous Elastic Response of Silicon to Uniaxial Shock Compression on Nanosecond Timescales* , Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-140746; also in *Phys. Rev. Lett.* **86**(11), 2349–2352 (2001).

M

MacKinnon, A. J., Borghesi, M., Hatchett, S., Key, M. H., Patel, P. K., Campbell, H., Schiavi, A., Snavely, R., Wilks, S. C., and Willi, O., *Effect of Plasma Scale Length on Multi-MeV Proton Production by Intense Laser Pulse*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139273; also in *Phys. Rev. Lett.* **86**(9), 1769–1772 (2001).

MacKinnon, A., *Recreating Planetary Cores in the Laboratory*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142029 ABS. Prepared for *12th American Physical Society Topical Conf on Shock Compression of Condensed Matter*, Atlanta, GA, Jun 24–29, 2001.

Mascio, W. A., Sewall, N. R., Kirkwood, R., Lee, F. D., and Hibbard, W. J., *Near to Backscattered Light Imaging Diagnostic on the National Ignition Facility*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137912; also in *Rev. Sci. Inst.* **72**(1Pt2), 976–978 (2001).

Maximov, A. V., Oppitz, R. M., Rozmus, W., and Tikhonchuk, V. T., “Nonlinear Stimulated Brillouin Scattering in Inhomogeneous Plasmas,” *Phys. Plasmas* **7**(10), 4227–4237 (2000).

Maximov, A. V., Rozmus, W., Capjack, C. E., Berger, R. L., Tikhonchuk, V. T., and Pesme, D., *Evolution of Nonlinear Laser Filaments in Plasmas*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142437 ABS. Prepared for *4th Intl Workshop on Laser–Plasma Interaction Physics*, Banff, Alberta, Canada, Feb 21–24, 2001.

Milam, D., *Comment: Two-Photon Photography*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-141860 COM. Submitted to the *J. Opt. Soc. Am. B*.

Miller, M. C., Celeste, J. R., Stoyer, M. A., Suter, L. J., Tobin, M. T., Grun, J., Davis, J. F., Barnes, C. W., and Wilson, D. C., *Debris Characterization Diagnostic for the NIF*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137945; also in *Rev. Sci. Inst.* **72**(1Pt2), 537–539 (2001).

Mirkarimi, P. B., Baker, S. L., Montcalm, C., and Folta, J. A., *Recovery of Multilayer-Coated Zerodur and ULE Optics for Extreme-Ultraviolet Lithography by Recoating*, *Reactive-Ion Etching, and Wet-Chemical Processes*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-138380; also in *Appl. Opt.* **40**(1), 62–70 (2001).

Moir, R. W., *Grazing Incidence Liquid Metal Mirrors (GILMM) for Radiation Hardened Final Optics for Laser Inertial Fusion Energy Power Plants*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-133027; also in *Fus. Engr. Design* **51-2**, 1121–1128 (2000).

Moir, R. W., *Liquid Walls for Fusion Reaction Chambers*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-135743; also in *Comments on Modern Phys.* **2**(2), C99–C111 (2000).

Moir, R. W., *Thick Liquid-Walled, Field-Reversed Configuration-Magnetic Fusion Power Plant*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139086 Rev 1; also in *Fusion Tech.* **39**(2Pt2), 758–767 (2001).

Montcalm, C., Bajt, S., and Seely, J. F., *MoRu-Be Multilayer-Coated Grating with 10.4% Normal-Incidence Efficiency Near the 11.4-nm Wavelength*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-140269; also in *Opt. Lett.* **26**(3), 125–127 (2001).

Montcalm, C., *Reduction of Residual Stress in Extreme Ultraviolet Mo/Si Multilayer Mirrors with Postdeposition Thermal Treatments*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-136174; also in *Opt. Engr.* **40**(3), 469–477 (2001).

Moody, J. D., MacGowan, B. J., Rothenberg, J. E., Berger, R. L., Divol, L., Glenzer, S. H., Kirkwood, R. K., Williams, E. A., and Young, P. E., *Backscatter Reduction Using Combined Spatial, Temporal, and Polarization Beam Smoothing in a Long-Scale-Length Laser Plasma*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139843; also in *Phys. Rev. Lett.* **86**(13), 2810–2813 (2001).

Moody, J. D., Williams, E. A., Chambers, D. M., Hawreliak, J., Sondhauss, P., Wark, J. S., Berger, R. L., and Young, P. E., *Characterization of Plasma-Induced Laser Smoothing*

Underdense Plasmas, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142048. Submitted to *Phys. Rev. Lett.*

Murphy, T. J., Barnes, C. W., Berggren, R. R., Bradley, P., Caldwell, S. E., Chrien, R. E., Faulkner, J. R., Gobby, P. L., Hoffman, N., Jimerson, J. L., Klare, K. A., Lee, C. L., Mack, J. M., Oertel, G. L., Swenson, F. J., Walsh, P. J., Walton, R. B., Watt, R. G., Wilke, M. D., Wilson, D. C., Young, C. S., Haan, S. W., Lerche, R. A., Moran, M. J., Phillips, T. W., Sangster, T. C., Leeper, R. J., Ruiz, C. L., Coopere, G. W., Disdier, L., Rouyer, A., Fedotoff, A., Glebov, V. Y., Meyerhofer, D. D., Soures, J. M., Stockl, C., Frenje, J. A., Hicks, D. G., Li, C. K., Petrasso, R. D., Seguin, F. H., Fletcher, K., Padalino, S., and Fisher, R. K., "Nuclear Diagnostics for the National Ignition Facility," *Rev. Sci. Inst.* **72**(1PT2), 773–779 (2001).

N

Nguyen, H. T., Bryan, S. R., Britten, J. A., and Perry, M. D., *Fabrication of Efficient, Large Aperture Transmission Diffraction Gratings by Ion-Beam Etching*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-ID-140249 Rev 1.

Nilsen, J., Dunn, J., Li, Y. L., Osterheld, A. L., Shlyaptsev, V. N., Barbee, T. W., and Hunter, J. R., *Review of Ni-Like Ion X-Ray Laser Research at Lawrence Livermore National Laboratory*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-140228; also in *Comptes Rendus* **1**(8), 1035–1044 (2000).

Nostrand, M. C., Page, R. H., Payne, S. A., Isaenko, L. I., and Yelisseyev, A. P., *Optical Properties of Dy³⁺- and Nd³⁺-Doped KPb₂Cl₅*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137803; also in *J. Opt. Soc. Am. B* **18**(3), 264–276 (2001).

P

Patel, F. D., Honea, E. C., Speth, J., Payne, S. A., Hutcheson, R., and Equall, R., *Laser Demonstration of Yb₃Al₅O₁₂(YbAG) and Materials Properties of Highly Doped Yb:YAG*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-139625; also in *IEEE J. Quant. Electr.* **37**(1), 135–144 (2001).

R

Remington, B., Belak, J., Colvin, J., Edwards, J., Kalantar, D., Lasinski, B., Pollaine, S., Shay, H., Weber, S., and Wolfer, B., *High-Pressure, Solid-State Experiments for NIF*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-ID-142676.

Roth, M., Cowan, T. E., Key, M. H., Hatchett, S. P., Brown, C., Fountain, W., Johnson, J., Pennington, D. M., Snavely, R. A., Wilks, S. C., Yasuike, K., Ruhl, H., Pegoraro, F., Bulanov, C. V., Campbell, E. M., Perry, M. D., and Powell, H., "Fast Ignition by Intense Laser-Accelerated Proton Beams," *Phys. Rev. Lett.* **86**(3), 436–439 (2001).

Rushford, M. C., Britten, J. A., Hoaglan, C., and Summers, L. J., *Surface Contouring by Controlled Application of Etchant Solution Using the Marangoni Effect*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-141812 ABS. Prepared for *46th Annual Mtg of the Society of Photo-Optical Instrumentation Engineers*, San Diego, CA, Jul 29–Aug 3, 2001.

Ryutov, D. D., *Destabilizing Effect of Thermal Conductivity on the Rayleigh–Taylor Instability in a Plasma*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-138745; also in *Phys. Plasmas* **7**(12), 4797–4800 (2000).

Ryutov, D. D., *Radical Restructuring of the Fusion Effort*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-136143; also in *Comments on Mod. Phys.* **2**(2), C139–154 (2000).

S

Schmid, G. J., Sangster, T. C., Lerche, R. A., Phillips, T. W., and Izumi, N., *Neutron Time-of-Flight Spectroscopy at OMEGA/NIF Using Current Mode Diamond Detectors*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142030 ABS. Prepared for *Intl Symp on Optical Science and Technology*, San Diego, CA, Jul 29–Aug 3, 2001.

Shigemori, K., Kodama, R., Farley, D. R., Koase, T., Estabrook, K. G., Remington, B. A., Ryutov, D. D., Ochi, Y., Azechi, H., Stone, J., and Turner, N., *Experiments on Radiative Collapse in Laser-Produced Plasmas Relevant to Astrophysical Jets*, Lawrence Livermore

National Laboratory, Livermore, CA, UCRL-MI-134490; also in *Phys. Rev. E* **62**(6 PT B), 8838–8841 (2000).

Shore, B. W., Johnson, M. A., Kulander, K. C., and Davis, J. I., *The Livermore Experience: Contributions of J. H. Eberly to Laser Excitation Theory*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-140656; also in *Opt. Express* **8**(2), 28–43 (2001).

Snavely, R. A., Key, M. H., Hatchett, S. P., Cowan, T. E., Roth, M., Phillips, T. W., Stoyer, M. A., Henry, E. A., Sangster, T. C., Singh, M. S., Wilks, S. C., MacKinnon, A., Offenberger, A., Pennington, D. M., Yasuike, K., Langdon, A. B., Lasinski, B. F., Johnson, J., Perry, M. D., and Campbell, E. M., *Intense High-Energy Proton Beams from Petawatt-Laser Irradiation of Solids*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-137050; also in *Phys. Rev. Lett.* **85**(14), 2945–2948 (2000).

Still, C. H., Berger, R. L., Langdon, A. B., Williams, E. A., and Divol, L. M., *Large Scale LPI Simulations with pF3D*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142069 ABS. Prepared for *4th Intl Workshop on Laser–Plasma Interaction Physics*, Banff, Alberta, Canada, Feb 21–24, 2001.

Stoyer, M. A., Sangster, T. C., Henry, E. A., Cable, M. D., Cowan, T. E., Hatchett, S. P., Key, M. H., Moran, M. J., Pennington, D. M., Perry, M. D., Phillips, T. W., Singh, M. S., Snavely, R. A., Tabak, M., and Wilks, S. C., *Nuclear Diagnostics for Petawatt Experiments*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-138297; also in *Rev. Sci. Inst.* **72**(1Pt2), 767–772 (2001).

Suter, L. J., and Langdon, A. B., *Laser–Plasma Interactions in High Temperature Hohlraums*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142589 ABS. Prepared for *Inertial Fusion Sciences and Applications 2001*, Kyoto, Japan, Sept 9–14, 2001.

Suter, L. J., *Progress Towards High Gain, High Yield NIF Targets*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-142272 ABS. Prepared for *Presentation to General Atomics*, San Diego, CA, Feb 15, 2001.

T

Turner, R. E., Landen, O. L., Bradley, D. K., Alvarez, S. S., Bell, P. M., Costa, R., Moody, J. D., and Lee, D., "Comparison of Charge Coupled Device vs Film Readouts for Gated Micro-Channel Plate Cameras," *Rev. Sci. Inst.* **72**(1PT2), 706–708 (2001).

V

VanZeeland, M. A., Gekelman, W., Dimonte, G., DiPeso, G., and Hewett, D., *Characterization of a Laser-Produced Plasma Expanding in an Ambient Background Plasma and the Possibility of Fast Wave Generation*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-140953 ABS. Prepared for *42nd Annual Mtg of the Div of Plasma Physics*, Quebec City, Canada, Oct 23–27, 2000.

Vitanov, N. V., Halfmann, T., Shore, B. W., and Bergmann, K., "Laser-Induced Population Transfer by Adiabatic Passage Techniques," *Ann. Rev. Phys. Chem.* **52**, 763–809 (2001).

W

Watt, R. G., Chrien, R. E., Klare, K. A., Murphy, T. J., Wilson, D. C., and Haan, S., "A Sensitive Neutron Spectrometer for the National Ignition Facility," *Rev. Sci. Inst.* **72**(1Pt2), 846–849 (2001).

Willi, O., Campbell, D. H., Schiavi, A., Borghesi, M., Galimberti, M., Gizzi, L. A., Nazarov, W., MacKinnon, A. J., Pukhov, A. J., and Meyer-Ter-Vehn, J., "Relativistic Laser Propagation Through Underdense and Overdense Plasmas," *Laser and Part. Beams* **19**(1), 5–13 (2001).

Williams, E. A., Moody, J. D., Young, P. E., Berger, R. L., Langdon, A. B., and Still, C. H., *Modeling the Vulcan Laser Propagation Experiments with pF3D*, Lawrence Livermore

National Laboratory, Livermore, CA, UCRL-JC-142066 ABS. Prepared for *4th Intl Workshop on Laser–Plasma Interaction Physics*, Banff, Alberta, Canada, Feb 21–24, 2001.

Y

Young, P., Baldis, H. A., Cheung, P., Rozmus, W., Kruer, W., and Wilks, S., *Critical Density Interaction Studies*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-ID-142776.

Z

Zweben, S. J., Caird, J., Davis, W., Johnson, D. W., and Le Blanc, B. P., "Plasma Turbulence Imaging Using High-Power Laser Thomson Scattering," *Rev. Sci. Inst.* **72**(1), 1151–1154 (2001).